

Notice of Allowability

Application No.

10/076,012

Examiner

Brian J. Sines

Applicant(s)

LIU ET AL.

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the response filed 7/21/2004.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ The drawings filed on 2/11/2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Election/Restrictions

Claims 1 – 14 have been rejoined for examination.

Specification

The disclosure is objected to because of the following informalities: There are numerous blanks in the specification referring to U.S. patent application serial numbers.

Appropriate correction is required.

Allowable Subject Matter

Claims 1 – 14 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the cited prior art neither teach nor fairly suggest a microfluidic device comprising: a substrate comprising at least first and second blocks that are configured to slide relative to each other; at least one reaction channel defined on the first block along which a sample migrates; at least one sample channel defined on the first block; at least one sample metering channel defined on the second block; and a sliding means for sliding the second block relative to the first block from a first position at which a sample is loaded from the sample channel into the sample metering channel, to a second position at which the sample is introduced from the sample metering channel to the reaction channel.

Regarding claim 13, the cited prior art neither teach nor fairly suggest a microfluidic device comprising: a substrate comprising at least first and second blocks that are configured to slide relative to each other; at least one sample channel defined on the first block; at least one sample metering channel defined on the first block; at least one waste reservoir on the second

Art Unit: 1743

block; and a sliding means for sliding the second block relative to the first block from a first position at which a sample is loaded from the sample channel into the sample metering channel with excess discharged to the waste reservoir in the second block, to a second position at which the sample is introduced from the sample metering channel to the reaction channel.

Regarding claim 14, the cited prior art neither teach nor fairly suggest a method for injecting a sample into a reaction channel defined on a microfluidic device, wherein the method comprises the steps of: providing a substrate comprising at least first and second blocks that are configured to slide relative to each other; defining at least one reaction channel on the first block along which the sample migrates; defining at least one sample channel on the first block; defining at least one sample metering channel on the second block; sliding the second block relative to the first block from a first position at which sample is loaded from the sample channel into the sample metering channel, to a second position at which the sample is introduced from the sample metering channel to the reaction channel.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Yoshida et al. teach a rotary valve apparatus. Bemis et al. teach a metering valve assembly. Bakalyar teaches a sample injector apparatus. Stone teaches a rotating sampling valve


Art Unit: 1743

apparatus. Wylie et al. teach a fluid control valve apparatus. Laursen teaches a rotatable rotor assembly for a chemical synthesis apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines, Ph.D. whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jill Warden
Supervisory Patent Examiner
Technology Center 1700